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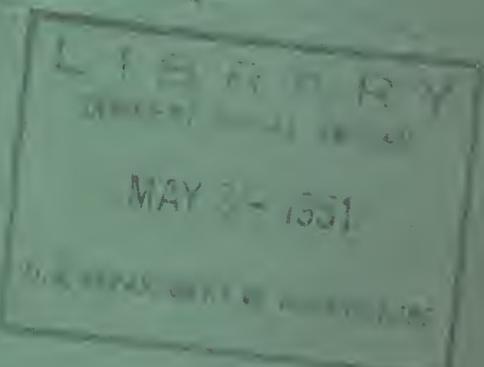
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FEDERAL - STATE COOPERATIVE
SNOW SURVEYS AND IRRIGATION WATER FORECASTS
for

**Montana and Northern Wyoming
Upper Missouri, Upper Columbia and
Yellowstone Rivers**

By
Division of Irrigation, Soil Conservation Service
United States Department of Agriculture
and
Montana Agricultural Experiment Station



In cooperation with the U. S. Forest Service, U. S. Geological Survey, National Park Service, U. S. Bureau of Reclamation, State Engineers of Montana and Wyoming and other Federal, State and local organizations.

As of
APR. 1, 1951

FEDERAL-STATE COOPERATIVE SNOW SURVEYS

AND

IRRIGATION WATER FORECASTS

FOR

MONTANA and NORTHERN WYOMING

Upper Missouri and Upper Columbia River
Basins

Report Prepared
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IRRIGATION WATER SUPPLY OUTLOOK
APRIL 1, 1951

The snow pack on the watersheds of both the Upper Missouri and Upper Columbia, in Montana, is VERY GOOD although the present prospects are for a smaller runoff than 1950 or 1949.

The snow pack on the Lower Yellowstone River in Northern Wyoming is above average, and the resulting runoff will probably be as large, or larger than 1950 or 1949. Valley precipitation in the Columbia Basin has been above average, while in the Missouri and Lower Yellowstone, the Valley precipitation is below average. Streamflow during the winter and spring months have generally been above average from the mountains. Water storage in reservoirs throughout the State of Montana, and Wyoming, is good for this time of year. All reservoirs should be filled by the end of the Snow Melt Season.

A POTENTIAL FLOOD HAZARD exists on the Upper Columbia and Northern part of the Missouri again this season. The magnitude of this Hazard is entirely dependent on sequence of metereological events that occur during the Melt Season, April-July. There is more snow water in the mountains this year than in 1948, which was a disasterous year due to the occurrence of high temperatures and precipitation during the Melt Season. A duplication of the 1948 Melt Season would produce equally high water in the Upper Columbia and parts of the Missouri tributaries.

The release of this bulletin has been withheld until after the Annual Meeting of the Upper Missouri River Water Forecast Committee Meeting, which was held on April 10 in Billings. Statements and forecasts are in agreement with the opinion of the committee.

JEFFERSON

The Jefferson Basin should produce a good water supply for irrigation uses this season. The snow pack at most of the courses is greater than 1950 or 1949.

MADISON

The snow pack on the Madison River is above average, but NOT as large as 1950 or 1949. Stream flow should be about 16 per cent above average.

GALLATIN

The Gallatin River Basin has a good water supply in storage in the snow and should produce about 107 per cent of average flow, which is not as large as 1950.

MISSOURI MAIN STEM

The flow in the Main Stem of the Missouri is largely affected by that of the Jefferson, Madison and Gallatin. However, the Northern tributaries from Three Forks down stream are all in good shape this season. The Sun River has approximately the same volume of flow as 1950 and 1949, as well as the Teton. The Marias is slightly below last year, but above average. POSSIBLE FLOOD DAMAGE along these three tributaries is a definite threat this season, depending largely on the rapidity of melt, and the addition of more water by precipitation. At Fort Benton, on the Missouri, the forecast for the period May through June is 2,025,000 acre feet; and, 1,050,000 acre feet for the period July through September. The May-September forecast being 3,075,000 acre feet. This volume, with the water already entering Fort Peck Reservoir since October 1, should result in a yearly volume of approximately 8,000,000 acre feet.

UPPER YELLOWSTONE

Snow cover on the Upper Yellowstone River Basin is GOOD this season. The snow survey courses in Yellowstone Park and nearby tributaries indicate an above average snow pack, ranging from 108 to 126 per cent of average. The seasonal stream flow from May through September should reach 1,770,000 acre feet.

LOWER YELLOWSTONE (WYOMING)

The snow pack on the Wind River is considerably above normal, and the stream flow from this basin should be above normal, reaching 670,000 acre feet between the months of April through September. This volume is 140 per cent of the average for this basin.

The Popo Agie River Basin is also well covered with an above normal snow pack; perhaps no as high as the Wind, but a very good season is expected.

The Big Horn River snow courses on the Owl Creek and Greybull Creek are above the short time average of 3 years that these courses have been established. At Sylvan Pass on the Shoshone, the course is 134 per cent above average. The flow below Buffalo Bill Reservoir, from April through September, should approximate 1,037,000 acre feet, or 130 per cent of the average flow for that season of the year.

COLUMBIA RIVER BASIN

The Columbia River Basin, as a whole, has been visited by many good storms this season, and the snow pack is again above the average at most of the snow survey courses. The snow pack is not as heavy as 1950 or 1949, but there exists a higher snow water equivalent than in 1948. Inasmuch as the Columbia Basin produced some damaging flood waters in 1948, we are prone to use that year as a measuring stick for other years. The FLOOD HAZARD lies largely in the rapidity of snow melt and, also, on the quantity of precipitation that may fall during the snow melt season. Both of these factors were high during 1948, but were exceptionally low during 1949 and 1950. With an above average snow water equivalent, we should watch the temperatures and precipitation volumes during April, May and June.

KOOTENAI RIVER

The Kootenai River, in Canada and the United States, is covered by an above average snow pack, and should produce an EXCELLENT water supply. The Flathead River Basin has a snow pack of about 20 per cent above normal, while the Clark Fork is averaging about 15 per cent above average. On the Pend Oreille River, the snow course at Hodoo Creek reached 135 inches of depth with 56.6 inches of water equivalent. This is perhaps the maximum of the snow depths in the Upper Columbia, in Montana. The Bitterroot River Basin, also, has a good snow pack this season that ranges from 11 per cent above normal to 38 per cent above normal.

Forecast volumes for the Missouri, Columbia and Lower Yellowstone Rivers, are tabulated on the following page, listed under the season and station selected for the best correlations available at this time.

APRIL 1, 1951
 PRELIMINARY ESTIMATES OF RUNOFF OF REPRESENTATIVE
 STREAM GAGE STATIONS IN MONTANA AND NORTHERN WYOMING

NAME OF STREAM AND STATION	May-June	July-Aug. Sept.	May-Sept.	Percent Average
MISSOURI BASIN				
		FORECAST IN ACRE FEET		
Gallatin River at Gateway	283,000	148,000	431,000	104
Madison River at West Yellowstone	101,000	76,000	177,000	116
Hyalite Creek at Ranger Station	20,400	11,200	31,600	102
No. Fk. Musselshell at Delphine	1,400	1,000	2,400	109
Judith River near Utica	22,570	8,600	30,580	82
Yellowstone River at Corwin Springs	1,050,000	720,000	1,770,000	107
Big Hole River at Melrose	567,200	223,400	790,600	138
Missouri River at Fort Benton	2,025,000	1,050,000	3,075,000	110
LOWER YELLOWSTONE RIVER (WYOMING)				
		April-June		April-Sept.
No. Fk. Popo Agie River near Lander	47,500		60,960	111
Wind River at Riverton	352,300		670,000	140
Shoshone River below Buffalo Bill	574,800		1,037,000	130
Middle Fork Powder near Kaycee	66,430		75,150	102
Tongue River near Dayton	92,250		119,580	98
Tongue River at Acme	234,000		285,000	115
Goose Creek near Sheridan	48,210		58,470	85
UPPER COLUMBIA RIVER BASIN				
Bitterroot River at Darby	422,000		520,000	125
Clark Fork above Missoula	1,600,000		1,720,000	134
Clark Fork Below Missoula	2,700,000		3,140,000	132
Clark Fork at St. Regis	3,520,000		4,150,000	125
Flathead River at Columbia Falls	6,100,000		7,200,000	157
Flathead River at Polson	6,200,000		7,800,000	153
Clark Fork River at Plains	8,700,000		12,300,000	147
Clark Fork River at Heron	11,000,000		14,100,000	139

Note: Probable Error for these forecast is plus or minus 10 to 15% of the forecast value. Values of (r) range from 0.720 to 0.983.



Missouri River Drainage														Missouri River Drainage (Cont.)													
Drainage Basin and Course Name	Montana Number	Elev.	Sec.	Lat.	Twp.	Range	Record Began	Measuring Dates ^a	Measured By ^b	Drainage Basin and Course Name	Montana Number	Elev.	Sec.	Lat.	Twp.	Range	Record Began	Measuring Dates ^a	Measured By ^b								
<u>JEFFERSON RIVER (ROCKY MOUNTAIN HEAD)</u>																											
Lakeview Ridge	11E3	7,200	27	1L3	2W	1948	3,1,5	9		Beavers Hill	9F3	6,000	6	13N	102W	1948	2,3,L,5	Pd.Obs.									
Lakeview Canyon	11E3	6,930	20	1L3	2W	1948	3,1,5	9		Owl Creek	8F1	8,700	30	13N	101W	1948	2,3,L,5	Pd.Obs.									
Lineville	11E2	6,950	15	5S	9W	1948	3,1	1		Lensleep R.S.	7E3	5,300	30	13N	86W	1935	4,5	1									
White Pine Ridge (includes PRAIRIE)	11E1	6,550	10	1L3	9W	1948	3,1,4	1		Timber Creek	9E2	6,600	25	17N	103W	1948	L,5	1									
Flaxy Dick	12D10	7,600	12	6S	10W	1948	3,1	1		Ranger Creek	7E1	6,600	32	53N	86W	1935	L,5	1									
Sold Stone	12D9	6,100	11	6S	10W	1948	3,1	1		Wood River	9F7	8,000	28	16N	103W	1939	2,3,L,5	1									
Lewin Pass	12E1	7,180	9	10S	15W	1948	3,1	1	(SMOKING RIVER) WYO.																		
Burrell Creek	13D12	6,450	14	9S	15W	1948	3,1	1	East Entrance	10E6	7,000	17	52N	109W	1948	1,2,3,L,5	5										
Trail Creek	13E2	7,030	15	10S	15W	1948	3,1	1	Sylvan Pass	10E5	7,100	12	52N	110W	1936	1,2,3,L,5	5										
Selma Junction	13D11	6,800	27	6S	15W	1948	3,1	1	TONGUE RIVER WYO.																		
(PIG HOLE)										Big Goose	7E2	7,700	1	53N	86W	1935	L,5	1									
Big Hole Pass	13D3	7,440	28	3S	18W	1948	3,1	1	POWDER RIVER WYO.																		
Big Hole Pass(Below)	13D1	6,900	2L	3S	18W	1948	3,1	1	Red Fork	7E1	7,000	18	13N	85W	1936	L,5											
East Boundary	13D5	6,700	22	3S	17W	1948	3,1	1	Sour Dough	6E1	6,500	17	49N	84W	1936	L,5	Pd.Obs. 1										
Witions Pass	13D2	7,100	4	2S	19W	193L	2,3,L,5	1,2																			
Jahke Creek	13D3	7,320	25	7S	16W	1948	3,1	1																			
Miner Forks	13D0	7,300	2L	cS	17W	1948	3,1	1																			
Miner Lake	13D7	6,720	10	6S	16W	1945	3,4,5	1																			
(WISE RIVER)																											
Anderson Mdw.	13D11	7,000	18	3S	12W	1948	3,1	1	KOOTENAI RIVER																		
Flk Horn	13D15	8,450	15	1S	12W	1934	3,1,5	2	COLUMBIA RIVER BASIN																		
Wise River (RUBY RIVER)	13D13	6,300	15	2S	12W	1948	3,1	1	Baree Mountain	15B1	6,000	1	25N	31W	1937	L,5	1										
Cottonwood	11E2	5,900	2L	10S	3W	1948	3,1	1	Blue Bird Basin	11A1	6,800	2L	37N	26W	1937	L,5	1										
Cottonwood (Upper)	11E1	8,400	30	10S	2W	1948	3,1	1	Brush Creek	11A4	5,000	13	30N	18W	1911	3,1	1										
Flashlight	12D3	6,950	22	8S	7W	1945	3,1,5	1	Red Mountain	15A1	6,000	4	36N	29W	1937	3,L,5	1										
Tobacco Root	12D2	6,900	13	1S	3W	1948	3,1	1	FLATHEAD RIVER																		
Vigilante	11D1	6,125	28	9S	3W	1948	3,1	1	Big Creek	13B3	6,750	627	22N	16W	1911	L,5	1										
(MADISON RIVER)									Brush Creek	11A1	5,000	13	30N	26W	1937	3,1	1										
Hebo	11E5	6,550	22	11S	3E	1934	1,2,3,4,5	2	Cattle Queen	13A1	6,700	7	35N	17W	1939	3,1	5										
West Yellowstone	11E7	6,700	3L	13S	5E	1934	1,2,3,4,5	2	Desert Mountain	13A2	5,600	2L	31N	19W	1937	1,2,3,L,5	1										
Norris Basin	10E2	7,500	140°-141°	110°-142°		1935	3,1	5,0	Elk Mountain	13B4	6,750	1	20N	19W	1911	3,1	4										
(GALLATIN RIVER)									Goat Mountain	12B7	7,000	20	22N	10W	1937	3,1	2										
Devil's Slide	10D1	8,100	1L	5S	6E	1935	3,1,4,5	2,6	Hell Roaring Divide	11A3	5,770	35	32N	22W	1912	4,5	1										
Hood Meadow	10D3	6,600	22	1S	6E	193L	3,1,4,5	2,0	Kishenehn	11A2	6,300	7	37N	21W	1916	L,5	1										
Mystic Lake	10D2	6,600	30	3S	7E	1935	2,3,4	6,7	Limestone Pass	13B8	7,000	34	17N	15W	1918	3,1	1										
New World	10D1	6,700	2L	3S	6E	1939	2,3,L,5	0,7	Logan Creek	11A5	6,300	34	30N	21W	1937	3,1	1										
21-Mile	11E6	7,150	1	11S	5E	1934	1,2,3,4,5	2	Marias Pass	13A5	5,250	34	30N	11W	1934	1,2,3,4,5	2										
(MISSOURI RIVER MAIN STEM)									North Fork Jocko	13B7	6,330	3	17N	17W	1911	3,1	4										
Chessmen Reservoir	12C5	6,200	2	8N	5W	1930	1,2,3,4,5	2	Rainy Lake	13B6	6,300	11	18N	16W	1947	3,1,5	1										
Crystal Lake	9C1	6,100	2L	12N	17E	1941	3,1	1	Snow Lab. # 16	13A9	5,200	15	29N	11W	1916	1,2,3,4,5	2										
Grasshopper	10C2	7,000	19	9N	6E	1938	3,1	1	Spotted Bear Mt.	13B2	7,000	23	25N	15W	1918	3,1	1										
Kings Hill	10C1	7,950	35	13N	7E	1937	3,1,4,5	2	Strawberry Lake	13B10	6,500	11	28N	19W	1918	3,1	1										
Picnic Grounds	12C0	6,500	22	5N	6W	1940	2,3,4	3	Trinkus Lake	13B1	6,500	9	25N	17W	1918	3,1	1										
Pipestone Pass	12D1	7,200	11	1N	7W	1938	2,3,4,5	1	Trot Lake	13B11	3,600	21	28N	17W	1918	3,1	1										
Stampede Pass	12C1	6,900	16	13N	7W	193L	3,1,4,5	2	Upper Holland Lake	13B5	7,000	28	20N	16W	1948	3,1	1										
Tennille Creek, Lower	12C2	6,250	13	8N	6W	1935	1,2,3,4,5	2	UPPER CLARK FORK																		
Tennille Creek, Middle	12C3	6,800	13	8N	6W	193L	1,2,3,4,5	2	Chessmen Reservoir	12C5	6,200	2	8N	5W	1936	1,2,3,L,5	2										
Tennille Creek, Upper	12C1	8,000	19	8N	5W	1935	1,2,3,4,5	2	East Fork Ranger Stn	13D1	5,100	16	2N	17W	1937	4	1										
(TETON RIVER)									El Dorado Mine	13C9	7,800	23	8N	12W	1916	4	11										
Fright Creek	12A1	6,000	13	26N	10W	1948	3,1	1	Gold Creek Lake	13C8	7,200	1L	8N	12W	1916	4	11										
Waliron Creek	12B2	5,600	16	25N	9W	1948	3,1	1	Intergaari	13C1	6,150	6	5N	13W	1939	2,3,L	3										
West Fork (SUN RIVER)	12B1	6,000	6	25N	9W	1948	3,1	1	North Fork Jocko	13B7	6,330	3	17N	17W	1911	3,1	4										
Bench Mark	12B8	5,500	9	20N	10W	1948	3,1	1	Picnic Grounds	12C6	6,500	22	5N	6W	1910	2,3,L	3										
Cabin Creek	12B0	5,400	33	23N	10W	1949	3,1	1	Pipestone Paes	12D1	7,200	11	1N	7W	1938	2,3,L,5	1										
5-Bull	12B9	5,600	36	20N	10W	1948	3,1	1	Rainy Lake	13B6	6,300	11	18N	16W	1917	3,1,5	1										
Gates Park	12B5	5,300	31	2LN	10W	1949	3,1	1	Skalkaho Summit	13C3	7,258	30	6N	17W	1937	4	1										
Goat Mountain	12B7	7,000	20	22N	10W	193L	3,1	2	Slide Rock Mountain	13C2	7,100	26	10N	16W	1937	4	1										
My Lake	13B9	7,300	21	23N	12W	1950	3,1	1	Southern Cross	13C5	6,500	9	5N	13W	1939	2,3,L	3										
Wrong Creek Ridge	12B3	6,800	17	25N	10W	1949	3,1	1	Stemple Pass	13C1	6,900	16	13N	7W	1935	3,1,5	2										
Wrong Creek	12B4	5,700	32	25N	10W	1949	3,1	1	Storm Lake No. 2	12C7	7,780	19	LN	13W	1939	4	1										
(MARIA RIVER)									Stuart Mill	13C6	6,500	19	5N	13W	1939	2,3,L	3										
Marias Pass	13A5	5,250	3L	30N	1LW	1936	1,2,3,4,5	2	Stuart Mountain # 1	13C1	7,000	6	1LN	18W	1936	4	1										
Snow Lab. #10	13A9	5,200	15	29N	1LW	1947																					

**SUPPLEMENTAL INDEX LIST OF SNOW SURVEY COURSES
IN ADJACENT BASINS, USED IN THIS REPORT AND
SHOWN ON THE INDEX MAP**

DRAINAGE AND SNOW COURSE	Adj. State No.	Montana Number	Elev. Feet	Section Lat.	Twp	Range Long.	Record Began	Measurement Dates	Meas- ured By
JEFFERSON									
Kilgore	10	11E12	6200	6	12N	39E	1937	1,2,3,4,5	pd.obs.
Blue Ridge Mine	5	11E11	6700	27	13N	38E	1938	4	pd.obs.
Camp Creek	6	12E3	6800	21	13N	36E	1936	1,2,3,4	1
Moose Creek	8	13D16	6200	22-27	27N	21E	1937	3,4,5	1
Big Springs	3	11E9	6500	34	19N	44E	1936	1,2,3,4,5	10
Island Park	9	11E10	3600	28	13N	43E	1936	1,2,3,4,5	10
Valley View	17	11E8	6500	7	15N	44E	1936	1,2,3,4	10
UPPER YELLOWSTONE Wyo.									
Lewis Lake Div.	9	10E9	7900	44-13		110-40	1919	1,2,3,4	10
Aster Creek	2	10E8	7700	44-17		110-37	1919	1,2,3,4	10
Tom Thumb Summit		10E7	7900	44-22		110-35	1949	3,4	10
LOWER YELLOWSTONE Wyo. (Wind River)									
Togwotee Pass	12	10F1	9600	29	44N	110W	1936	2,3,4,5	10
Kendall	25	9F12	7900	23	38N	110W	1936	3,4,5	1
Loomis Park	26	10F4	8500	14	37N	111W	1942	3,4,5	1
Yellow Jacket	14	10F5	6775	33	42N	112W	1936	3,4,5	1
Black Rock	2	10F3	8600	4	44N	111W	1936	2, 4	10
Dutch Jce	23	9G6	8700	32	31N	104W	1936	4,5	1
Mulligan Park	24	9G5	8900	17	35N	108W	1936	3,4,5	1
KOOTENAI									
Smith Creek	13	16A1	4800	29	64N	3W	1937	4,5	1
Canada									
Fernie	10		3500	49-31		115-01	1939		
New Fernie	10A		4100						
Gray Creek	34		5100	39-37		116-41	1948		
Marble Canyon	32		5000	51-12		116-09	1947		
Nelsen Creek	19		3050	44-25		117-14	1938		
Sinclair Pass	3A		4500	50-40		115-58	1947		
Sullivan Mine	20A		5100	49-43		116-01	1945		
Upper Elk River	41		4400	50-01		114-56	1947		
Kimberly	20		3800	49-41		115-59	1945		
UPPER CLARK FORK Idaho									
49 Meadows	1	15B10	5000	6	43N	5E	1937	1,2,3,4,5	1
Lookout	10	15B2	5250	4	47N	6E	1921	1,2,3,4,5	1
Above Roland	2	15B7	4350	35	47N	6E	1926	3	12*
Below Roland	3	15B6	3770	34	47N	6E	1926	3	12
Sunset	16	15B9	5600	28	49N	5E	1921	3	12
PEND OREILLE Idaho									
Mosquito Ridge	9	16A4	5110	5	54N	2E	1937	4,5	1
Freezeout #2		15B10	6800	21	15N	27W	1951	3,4	1

SUPPLEMENTAL INDEX LIST OF SNOW SURVEY COURSES
IN ADJACENT BASINS, USED IN THIS REPORT AND
SHOWN ON THE INDEX MAP

DRAINAGE AND SNOW COURSE	Adj. State No.	Montana Number	Elev. Feet	Section Lat.	Twp	Range Long.	Record Began	Measurement Dates	Meas- ured By
BITTERROOT									
Moose Creek	8	13D16	6200	22-27	27N	21N	1937	3,4,5	1
Kit Carson	3	14D3	4700	4	27N	16E	1937	4	1
Savage Pass	7	14C4	6000	18	36N	15E	1937	4	1
Powell Pasture	6	15C3	3700	27	27N	14E	1937	4	1
Packers Mdw.	5	14C2	5700	15	38N	15E	1937	2,3,4,5	1
FLATHEAD									
Basin Creek		13-B-14	5000	11	19N	12W	1951	2,3,4,5	1
Holbrook		13-B-13	4530	18	21N	13W	1951	2,3,4,5	1
Trout Lake #2		13-A-12	3600	21	28N	17W	1951	2,3,4,5	1
Twin Creeks		13-B-11	3580	14	26N	16W	1951	2,3,4,5	1
Quintonkon		13-A-13	3800	11	26N	17W	1951	2,3,4,5	1
TONGUE RIVER									
Burgess Ranger Sta.		7-E-4	7900	36	56N	89W	1950	3,4,5	Pd.Obs.
Dome Lake		7-E-5	8800	11	53N	87W	1950	3,4,5	Pd.Obs.
POWDER RIVER									
Soldier Park		7-E-6	8700	36	51N	85W	1950	3,4,5	Pd.Obs.i
Muddy Pass		7-R-7	9700	11	48N	85W	1950	3,4,5	Pd.Obs.i
North Powder		7-E-8	8500	5	47N	85W	1951	3,4,5	Pd.Obs

*Washington Water Power Company

STORAGE IN RESERVOIRS OF MONTANA AND NORTHERN WYOMING
Reservoir Volumes in 1,000's of Acre Feet

Reservoir	Location on or Diversion from	Usable Capacity	Contents	Contents	April 1 10-Year Average
			This Year April 1 1951	Last Year April 1 1950	
Lake Sewall	Missouri	37.8	21.0	24.0	
Hauser Lake	Missouri	52.1	35.7	27.7	41.8
Holter Reservoir	Missouri	81.9	74.4	30.8	53.6
Fort Peck Res.	Missouri	19,000.0	12,960.0	11,940.0	9814.3
Ruby Reservoir	Ruby	38.5			
Hebgen Reservoir	Madison River	345.0	232.4	216.6	321.2
Madison Reservoir	Madison River	41.0	36.0	35.4	33.8
Smith River Res.	Smith River	10.7			
Gibson Reservoir	N.Fk. Sun River	105.0	80.6	46.6	65.7
Willow Creek	N.Fk. Sun-Willow Cr.	32.3	26.0	3.8	13.7
Pishkun Reservoir	N.Fk. Sun River	32.0	18.9	18.8	15.5
Lower Two Medicine L.	Two Medicine River	14.0			
Four Horns Res.	Badger Creek	20.0		6.0	8.1
Birch Creek Res.	Birch Creek	30.0	30.0	21.3	22.6
Lake Francis Res.	Birch Creek	112.0	96.5	83.3	77.6
Askley Lake	Judith River	5.8		4.4	4.3
Durand Reservoir	N.Fk. Musselshell	7.0	6.1	6.4	
Dead Man Basin	Musselshell River	52.5			
Martinsdale Res.	S.Fk. Musselshell	23.1	12.1	11.0	9.4
Fresno Reservoir	Milk River	127.2	99.9	17.7	61.2
Nelson Reservoir	Milk Reservoir	66.8		5.7	31.7
Mystic Lake	W.Rosebud Creek	20.8	5.2	4.3	5.7
Cooney Reservoir	Red Lodge Creek	27.5	14.1	14.1	10.9
Tongue Reservoir	Tongue River	73.9	9.0	13.9	13.7
Sherburne Lake Res.	Swiftcurrent Creek	66.1		38.0	21.1
Lake Helena	Missouri River	10.4	3.2	1.1	
YELLOWSTONE RIVER BASIN (Wyoming)					
Buffalo Bill	Shoshone	456.6	269.1	169.4	333.8
Pilot Butte	Wind River	30.1	13.8	13.7	15.0
Bull Lake	Wind River	155.0	79.5		57.6
COLUMBIA RIVER BASIN (Montana)					
Georgetown Lake	Flint Creek	31.0	19.9	18.4	22.6
E.Fk.Rock Cr.Res.	E.Fk. Rock Creek	16.0			
W.Fk.Bitterroot Res.	E.Fk. Bitterroot	31.7	10.0	3.5	7.8
Como Lake	Rock Creek	34.8			
Flathead Lake (Sommers)	Flathead River	1,791.0	651.6	614.1	319.4
*Little Bitterroot	Little Bitterroot	37.1	35.7	29.0	9.8
*Dry Fork Reservoirs	Dry Fork Creek	6.7	5.1	4.9	2.5
**Mission Valley	Mission Valley				
9 Reservoirs	(Flathead River)	105.0	52.5	31.8	39.3

*Comprised of two reservoirs on Little Bitterroot River.

*Comprised of two reservoirs on Dry Fork Creek.

**Comprises nine small reservoirs on Mission Valley Indian Irrigation Service Project.



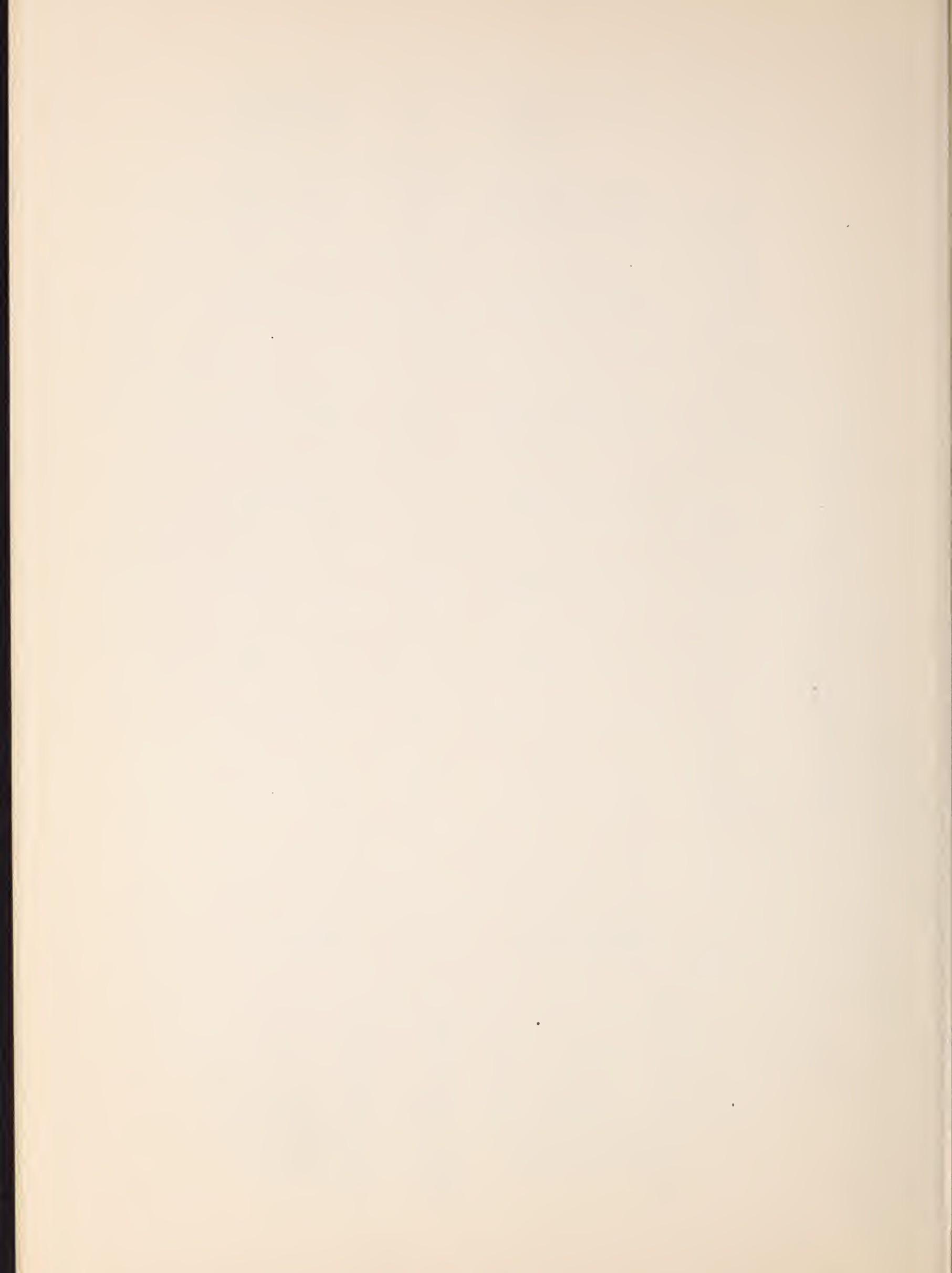
PRECIPITATION DATA FOR APRIL 1, 1951
MONTANA

Station	Elev. ation	1950			1951			Mar.			Seasonal Accumulation		
		Precipitation			Precipitation			from Normal			Precipitation		
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	1950-51	Normal	Departure	1950-51	Normal	Departure
WEST OF DIVIDE													
Butte (Airport)	5533	0.53	1.20	0.59	0.92	0.82	1.01	+0.37	5.07	3.13	+1.94		
Phillipsburg	5280	0.51	1.25	0.64	1.43	1.45	1.85	+0.87	7.13	5.03	+7.13		
Hamilton	3529	1.78	1.58	0.71	1.21	1.52	4.88	+0.23	24.93	15.11	+9.82		
West Glacier	3154	5.87	2.35	5.17	4.77	5.37	6.52	+0.38	35.09	17.54	+17.55		
Summit (Marias)	5213	7.53	6.13	5.83	5.37	1.53	1.72	-0.14	9.40	8.71	+0.69		
Ovando 1 SW	4101	1.02	2.38	1.63	1.53	1.42	1.12	-1.09	28.87	19.77	+9.10		
Trout Creek	2485	6.36	3.95	4.67	5.42	6.51	1.96			11.57			
Thompson Falls	2435	4.36	2.79	2.25	2.97	3.44				10.39			
Average (8)		3.50	2.70	2.69	2.95	3.36							
CENTRAL DIVISION													
Babb	4300	1.04	1.23	0.85	0.65	1.79	0.54	+0.03	2.31	5.98	-1.32		
Havre	2488	0.24	0.41	0.32	0.39	0.42	1.34	+0.36	4.77	3.63	+0.54		
Great Falls (Airport)	3664	0.03	1.19	0.58	0.41	0.24	1.22	+0.36		4.23			
Helena (Airport)	3893	0.43	1.50	0.61	0.38	0.24	0.84	+0.05		3.99			
Lewistown (Airport)	4132	0.74	0.83	1.05	0.17	0.20	0.61	-0.42		3.60			
Livingston	4485	0.94	1.05	0.81	0.38	0.40	1.45	+0.59		5.03			
Wisdom	6058	1.06	1.15	0.48	0.71	0.93	0.53	-0.29		4.86			
West Yellowstone	6669	2.88	1.79	1.95	2.28	1.91	2.18	-0.04		12.99			
Mystic Lake	6558	0.86	2.37	1.08	2.02	0.17	3.50	+1.45		10.00			
Average (9)		0.91	1.28	0.85	0.82		1.36	-1.57		6.63			
EASTERN DIVISION													
Malta	2255	0.39	0.18	0.35	0.49	0.52	0.53	-0.01		2.16	2.98	-0.52	
Fort Peck	2180	0.24	0.25	0.23	0.48	0.39				2.65	2.40		
Medicine Lake	1962	0.50	0.10	0.21	0.36	0.49	0.25	-0.16		1.91	4.45	-0.49	
Circle	2428	0.54	0.18	0.13	0.33	0.50	0.05	-0.95		1.73	4.11	-2.72	
Billings	3139	0.83	0.88	0.68	0.79	0.38	0.69	-0.15		4.14	4.11	-0.30	
Miles City	2392	0.40	0.52	0.31	0.08	0.27	0.14	-0.72		1.72	4.11	-2.39	
Glendive	2076	0.45	0.16	0.07	0.37	0.42	0.12	-0.72		1.59	3.59	-2.00	
Broadus	3026	0.46	0.41	0.40	0.48	0.31	0.60	-0.12		2.66	3.76	-1.10	
Average (8)		0.48	0.34	0.31	0.41		0.34	-0.66		3.55	3.55	-1.28	



PRECIPITATION DATA FOR APRIL 1, 1951
NORTHERN WYOMING

Station	Elev- ation	1950			1951			Seasonal Accumulation		
		Precipitation		Dept.	from Normal	Precipitation		Dept.	from Normal	Departure
		Oct.	Nov.			Jan.	Feb.			
BIG HORN RIVER BASIN										
Cody	4984	.08	1.29	.28	.77	0.09	0.58	+0.08	2.62	+0.38
Lovell	3825	.02	.32	.03	.09	T	0.10	-0.25	2.19	-1.63
Worland	4061	T	.10	.40	T	0.10	0.30	-0.11	2.34	-1.44
Sunshine	4 SW	.17	1.04	.29	.37	0.67	0.29	-0.94	5.19	-2.36
Thermopolis	4336	.19	.80	.21	.07	0.18	0.09	-0.83	3.86	-2.43
Riverton	4954	.22	.57	.00	.05	0.31	0.45	-0.04	1.34	-1.41
Dubois	6917	.37	.71	T	.16	0.45	0.80	+0.26	2.98	-0.81
Average (7)		.15	.68	.17	.22	0.25	0.37	-0.26	1.75	-3.30
TONGUE RIVER BASIN										
Sheridan	4021	.51	1.05	.58	.55	0.24	1.20	+0.04	4.13	-0.92
POWDER RIVER BASIN										
Arvada	3680	.22	.31	.06	.16	0.18	0.81	+0.04	1.74	-1.87
Metz Ranch	5280	.37	.67	.19	.46	0.38	0.43	-0.39	2.50	-0.96
Gillette	4542	.63	.72	.05	.50	0.25	1.30	+0.30	3.45	-1.-1
Nine Mile Creek	5000	.70	.40	.05	.20	0.50	0.30	-0.15	2.15	-0.93
Mid West	4850	.83	.47	.28	.23	0.27	0.45	-0.69	2.53	-1.94
Average (5)		.55	.51			.31	.66	-0.24	2.47	-1.35



MONTANA SNOW SURVEYS APRIL 1, 1951

MISSOURI BASIN
DRAINAGE BASIN
AND
SNOW COURSE **

No.	Elev. Survey 1951	Date of Survey 1951	Snow Depth (In.) 1951	Average Data April 1 1949			Year of Record	Ground Surface Condition
				Apr. 1 1951	Past Records 1950	Avg.		
JEFFERSON RIVER (Rock-Beaverhead)								
11E3	7400	Apr. 2	36.3	10.1	10.0	10.4	4	G.N.F.
11E4	6930	Apr. 2	43.7	11.3	10.3	11.4	4	G.N.F.
Limekiln	6950	Mar. 6	NO	SNOW	0.8	7.7	4	G.N.F.
White Pine Ridge	8850	Mar. 8	21.2	4.4	7.2	7.4	4	G.N.F.
*Kilgore	6200	Mar. 29	30.0	8.6	15.5	11.0	15	G.N.F.
*Camp Creek	6800	Mar. 30	29.0	8.3	13.9	10.7	16	G.N.F.
*Blue Ledge Mine (Horse Prairie)	6700	Mar. 29	44.0	14.9	26.1	16.7	14	G.N.F.
Bloody Dick	13D10	Mar. 13	50.4	15.4	11.6	15.2	125	G.N.F.
Gold Stone	13D9	Mar. 13	61.2	20.5	15.2	15.7	130	G.N.F.
Lemhi Pass	13E1	Mar. 9	46.6	12.5	9.5	11.8	116	G.N.F.
Terrell Creek	13D12	Mar. 10	28.4	6.8	3.0	4.2	160	G.N.F.
Trail Creek	13E2	Mar. 9	42.0	10.8	7.4	10.4	110	G.N.F.
Selway Junction (Big Hole)	13D11	Mar. 10	42.3	11.6	7.5	12.8	119	G.N.F.
Big Hole Pass	13D3	Mar. 14	61.2	21.1	18.2	24.5	107	G.N.F.
Big Hole Pass (Below)	13D4	Mar. 14	51.4	17.6	15.4	19.6	109	G.N.F.
East Boundary	13D5	Mar. 14	35.9	12.5	8.8	11.8	122	G.N.F.
Jahne Creek	13D8	Mar. 13	47.4	14.0	10.8	14.4	196	G.N.F.
Miner Forks	13D6	Mar. 12	53.2	17.3	11.4	13.8	131	G.N.F.
Miner Lake	13D7	Mar. 12	37.3	10.2	7.6	10.6	122	G.N.F.
(Wise River)								
Anderson Meadow	13D14	Mar. 16	35.8	10.0	8.3	10.6	157	G.N.F.
Elk Horn	13D15	Mar. 31	41.9	12.7	10.0	9.2	138	G.N.F.
Wise River	13D13	Mar. 16	23.8	5.6	5.2	7.4	98	G.N.F.
(Ruby River)								
Cottonwood	11E2	Mar. 21	31.0	8.8	11.5	11.9	89	G.N.F.
Cottonwood (Upper)	11E1	Mar. 21	31.7	10.2	12.1	11.6	97	G.N.F.
Fleshlight	12D3	Apr. 2	18.9	5.7	4.2	6.7	103	G.N.F.
Tobacco Root	12D2	Mar. 20	33.7	10.4	11.4	13.3	91	G.N.F.
Vigilante	11D1	Mar. 21	NO	SNOW	3.3	0.0	80	G.F.

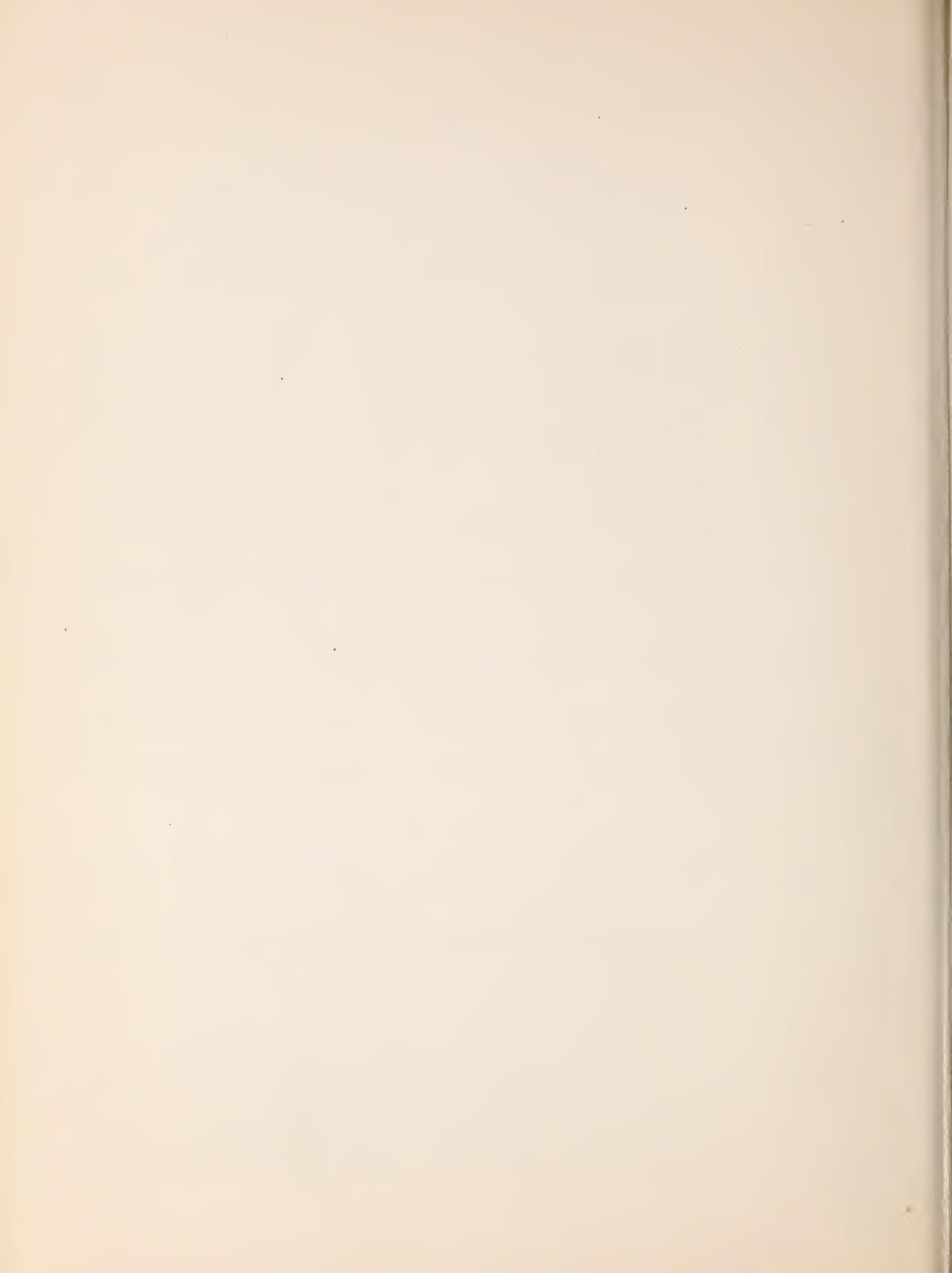
*Adjacent Basin

MONTANA SNOW SURVEYS, APRIL 1, 1951

MISSOURI BASIN

DRAINAGE BASIN AND SNOW COURSE **	No.	Elev. Survey 1951	Date of Survey 1951	Snow Depth (In.) 1951	Water Content (Inches)			Years of Record	Ground Surface Condition
					Apr. 1 1951	Past Records 1950	Average April 1 1949		
MADISON RIVER									
Hebgen	11E5	6550	Mar. 30	35.2	10.9	14.0	12.1	88	G.F.
West Yellowstone	11E7	6700	Mar. 29	42.5	13.9	14.2	11.2	15	G.F.
21-Mile	11E6	7150	Mar. 29	56.3	19.2	21.0	20.6	15	G.N.F.
*Big Springs	11E2	6500	Mar. 28	62.0	22.4	25.9	27.8	16	--
*Island Park	11E10	3600	Mar. 29	53.0	17.6	21.6	22.5	16	--
*Valley View	11E8	6500	Mar. 29	48.0	14.9	19.5	15.4	16	--
Norris Basin	10E2	7500				18.8	14.6	109	G.N.F.
GALLATIN RIVER									
Devil's Slide	10D4	8100	Mar. 31	62.1	19.9	20.2	21.0	100	G.F.
Hood Meadow	10D3	6600	Mar. 31	31.1	9.4	7.3	10.9	112	G.F.
Mystic Lake	10D2	6600	Apr. 4	25.6	8.1	8.4	10.7	108	G.N.F.
New World	10D1	6700	Apr. 4	33.3	10.6	10.8	11.4	95	G.F.
21-Mile	11E6	7150	Mar. 29	56.3	19.2	21.0	20.0	116	G.N.F.
MISSOURI RIVER MAIN STEM									
Chessman Reservoir	12C5	6200	Mar. 30	15.4	4.6	4.4	7.6	100	--
Crystal Lake	9C1	6100	Mar. 29	37.2	10.6	10.5	12.0	89	G.N.F.
Grasshopper	10C2	7000	Apr. 3	13.0	14.0	5.8	5.1	78	--
Kings Hill	10C1	7950	Mar. 29	45.8	13.7	17.1	13.2	104	--
Picnic Grounds	13C6	6500	Mar. 31	81.6	5.6	2.6	4.2	113	--
Pipestone Pass	12D1	7200	Apr. 1	28.0	6.8	4.2	7.9	120	--
Stemple Pass	12C1	6900	Mar. 29	42.4	11.1	11.6	13.5	117	--
Tennille, Lower	12C2	6250	Apr. 2	26.4	8.3	7.6	8.8	130	--
Tennille, Middle	12C3	6800	Apr. 2	42.2	12.0	12.8	10.3	116	--
Tennille, Upper	12C4	8000	Apr. 3	47.5	15.4	15.8	13.2	117	--
(Teton River)									
Fright Creek	12A1	6000	Mar. 28	63.5	22.3	22.3	17.9	117	G.N.F.
Waldron Creek	12B2	5600	Mar. 27	28.1	9.4	10.7	9.5	108	G.N.F.
West Fork	12B1	6000	Mar. 27	61.3	21.0	24.6	19.9	106	G.N.F.

*Adjacent Basin



MONTANA SNOW SURVEYS, APRIL 1, 1950

MISSOURI BAPTIST

DRAINAGE BASIN AND SNOW COURSE **	No.	Elev.,	Survey 1951	Snow Depth (In.)	Date of Survey 1951	Water Content (Inches)				Years of Record	Ground Surface Condition
						Past Records		Average Data			
						1950	1949	April 1 Avg.	% Avg.		
(Sun River)											
Benchmark	12B8	5500			Mar. 26	34.0	12.3	11.6	106	4	G.N.F.
Cabin Creek	12B6	5400			Apr. 5	21.6	6.7	7.5	85	3	
5-Bull	12B9	5600			Mar. 26	27.1	9.2	8.8	102	4	
Gates Park	12B5	5300			Apr. 5	37.9	11.5	11.7	95	3	
Goat Mountain	12B7	7000			Mar. 31	42.7	12.7	13.4	127	13	
My Lake	13B9	7300			Apr. 3	95.5	40.5	41.1	97	2	
Wrong Ridge	12B3	6800			Mar. 30	68.0	26.2	28.5	102	3	
Wrong Creek (Meritas River)	12B4	5700			Mar. 29	51.0	17.3	20.0	97	3	
Marias Pass	12B5	5250			Mar. 29	66.8	24.5	28.7	146	16	
Snow Lab. #16 (Milk River)	13A9	5200			Mar. 29	69.4	23.2	23.4	100	5	
Rocky Boy	9A1	5200			Apr. 1	12.8	3.8	5.1	6.7	5.5	
UPPER YELLOWSTONE											
Camp Senia	901	7890			Mar. 29	31.3	6.8	5.8	94	22	
Canyon	10E3	7750			Apr. 1	56.5	18.9	18.3	114	6	
Cooke City	10D7	7400			Mar. 31	32.8	9.2	8.4	16.5	—	
Crevise Mt.	10D5	8400			Apr. 1	34.0	9.5	9.4	7.6	15	
Independence	10D6	8000			Mar. 28	59.4	19.2	21.2	13.0	17	
Lake Camp	10E4	7850			Mar. 31	41.2	11.7	12.6	22.7	108	
Lodgepole, Wyo.	9E1	8200			Apr. 1	144.9	15.9	—	17.7	10	
Lupine	10E1	7309			Apr. 2	36.6	10.8	11.7	15.2	16	
*Lewis Lake Divide	10E9	7000			Apr. 1	117.0	50.4	51.3	14.8	14	
*Astor Creek	10E8	7700			Apr. 1	97.0	39.0	47.1	9.8	13	
*Tom Thumb Summit (Shields River)	10E7	7900			Apr. 1	74.0	27.8	28.6	45.1	32	
Porcupine (Musselshell River)	10C3	9200			Mar. 27	19.3	5.8	5.7	25.0	112	
Grasshopper	10C2	7000			Apr. 3	13.0	4.0	4.7	123	13	
									5.1	78	G.F.
									8.1	14	



MONTANA SNOW SURVEYS APRIL 1, 1951

MISSOURI BASIN

DRAINAGE BASIN AND SNOW COURSE **				Water Content (Inches)				Ground Sur face Condition		
Date of Survey	Snow Depth (In.)	Apr. 1	Past Records	Average Data		Years of Record				
1951	1951	1951	1950 1949	1950	1949	Avg.	%Avg.			

LOWER YELLOWSTONE (Wind River)														
Brooks Lake #3	9200	10F2	9F6	9F10	9F9	9F2	9F3	9G2	9F4	9G3	9F1	9F11	9F5	
Burroughs Creek	8800	Mar.	27	27	29	29	29	25	28	25	25	27	8000	8000
Dinwoodie	10000	Mar.	29	29	29	29	28	28	25	25	25	27	9500	9500
Dry Creek	9500	Mar.	29	29	29	28	28	28	25	25	25	27	8750	8500
Du Noir	10000	Mar.	29	29	29	28	28	28	25	25	25	27	9500	9500
Geyser Creek	9500	Mar.	29	29	29	28	28	28	25	25	25	27	8750	8500
Hobbs Park	10000	Mar.	25	25	25	25	25	25	25	25	25	27	9500	9500
Little Warm	9500	Mar.	28	28	28	28	28	28	25	25	25	27	8750	8500
Mosquito Park	10000	Mar.	25	25	25	25	25	25	25	25	25	27	9500	9500
Sheridan	9500	Mar.	27	27	27	27	27	27	25	25	25	27	8750	8500
St. Lawrence	10000	Apr.	2	2	2	2	2	2	2	2	2	2	9000	9000
T-Cross Ranch	8000	Apr.	2	2	2	2	2	2	2	2	2	2	8400	8400
Trout Creek	9F5	Mar.	25	25	25	25	25	25	25	25	25	25	9F1	9600
*Togwotee Pass	9G1	Mar.	30	30	30	30	30	30	30	30	30	30	9F12	7900
*Kendall	9F1	Mar.	30	30	30	30	30	30	30	30	30	30	10F5	8500
*Locomis Park	10F5	Mar.	30	30	30	30	30	30	30	30	30	30	10F3	8600
*Black Rock	10F3	Mar.	27	27	27	27	27	27	27	27	27	27	10F5	6775
*Yellow Jacket	10F5	Mar.	27	27	27	27	27	27	27	27	27	27	10F2	8900
OPO AGIE RIVER														
Blue Ridge	9500	Mar.	23	23	23	23	23	23	23	23	23	23	9000	9000
Grennier Meadows	9000	Mar.	23	23	23	23	23	23	23	23	23	23	8500	8500
Larsen Creek	9000	Mar.	24	24	24	24	24	24	24	24	24	24	9000	9000
Sawmill Glade	9000	Mar.	23	23	23	23	23	23	23	23	23	23	8500	8500
South Pass	9000	Mar.	23	23	23	23	23	23	23	23	23	23	8900	8900
Mulligan Park	9000	Mar.	23	23	23	23	23	23	23	23	23	23	9000	9000
Dutch Joe	8700	Mar.	23	23	23	23	23	23	23	23	23	23	9000	9000

MONTANA SNOW SURVEYS APRIL 1, 1951

MISSOURI BASIN

DRAINAGE BASIN AND SNOW COURSE **	No.	Elev.	Survey 1951	Date	Snow Depth (In.)	Water Content (Inches)			Years of Record	Ground Surface Condition
				of	Apr. 1 1951	Past Records 1950	Average April 1 1949	% Avg.		
BIG HORN RIVER (Wyoming)										
Beavers Mill	9F3	8000	Mar.	30	36.2	9.1	8.9	7.9	8.6	106
Owl Creek	8F1	8700	Mar.	31	32.6	7.3	6.2	6.6	6.7	3
Tensleep R. S.	7E3	8300	Mar.	31	28.9	7.2	8.4	3.5	6.9	3
Timber Creek	9E2	9000	Mar.	30	24.2	7.2	4.7	7.5	6.5	15
Ranger Creek	7E1	8800	Mar.	29	25.0	7.4	5.0	7.4	111	3
Wood River	9E7	8000	Mar.	29	25.0	7.4	5.0	5.7	10	10
SHOSHONE RIVER										
East Entrance	10E6	7000	Mar.	30	44.0	24.8	11.3	17.6	14.6	3
Sylvan Pass	10E5	7100	Mar.	30	53.5	19.2	18.6	19.4	14.3	14
TONGUE RIVER										
Burgess Junction	7E4	7900	Apr.	4	44.3	15.8	12.0	13.9	11.4	2
Big Goose	7E2	7700	Apr.	4	15.3	3.8	2.5	4.3	89	16
Dome Lake	7E5	9000	Apr.	4	28.9	7.2	5.9	6.6	109	2
POWDER RIVER										
North Powder	7E8	8500	Mar.	26	28.6	6.8	--	--	--	1
Muddy Pass	7E7	9700	Apr.	2	31.0	8.1	--	--	--	2
Sour Dough	6F1	8500	Apr.	5	26.6	7.0	5.1	7.7	6.0	15
Soldier Park	7E6	8700	Apr.	4	24.7	5.8	4.6	5.2	5.2	2
CHEYENNE RIVER (South Dakota)										
Upper Spearfish	1 S.D.	6500	Apr.	1	15.8	3.5	7.9	10.8	6.6	53
Upper Castle	2 S.D.	6800	Apr.	1	22.5	4.2	8.8	9.1	5.2	81
Deerfield	3 S.D.	6000	Apr.	1	5.9	1.9	8.8	9.1	4.2	45



MONTANA SNOW SURVEYS APRIL 1, 1951

MISSOURI BASIN

DRAINAGE BASIN AND SNOW COURSE **	No.	Elev.	Date of Survey 1951	Snow Depth (In.)	Vector Content (Inches)	Average Past Records 1950	Avg. 1949	Avg. Ave.	Years of Record	Ground Surface Condition
Baree Mountain	15B1	6000	Mar. 30	109.3	44.2	55.2	39.7	111	13	G.N.F.
Blue Bird Basin	14A1	6800	Mar. 28	120.2	45.3	38.2	35.5	128	13	-----
Brush Creek	14A1+	5000	Apr. 1	36.7	11.6	19.0	12.0	96	7	-----
Fernie	Canada	3500	Mar. 29	34.5	11.5	14.9	7.7	14.9	15	-----
New Fernie	Canada	4100	Mar. 30	47.8	16.7	New Course	7.8	1	1	-----
Fergusson	Canada	3000	Mar. 31	55.2	23.7	22.9	21.1	122	14	-----
Gerryard	Canada	6000	Apr. 3	64.1	17.3	15.2	12.5	119	17	-----
Gray Creek	Canada	5100	Mar. 29	68.3	23.0	24.0	20.5	105	4	-----
Kimberley	Canada	3800	Apr. 1	32.6	9.4	11.2	7.1	177	24	-----
Marble Canyon	Canada	5000	Mar. 30	64.5	22.0	15.7	13.9	146	5	-----
Nelson Creek	Canada	3050	Mar. 30	40.7	18.0	19.9	18.8	133	24	-----
Red Mountain Mont.	15A1	6000	Apr. 3	62.5	22.0	30.4	21.3	120	13	-----
Sandon	Canada	3500	Mar. 31	36.6	14.5	12.8	10.7	110	14	-----
Sinclair Pass	Canada	4500	Mar. 31	31.3	9.5	5.9	3.6	120	15	-----
Smith Creek	16A1	4800	Mar. 31	127.0	30.5	38.1	49.3	121	13	-----
Sullivan Mine	Canada	5100	Mar. 31	60.9	18.8	21.2	15.3	116	6	-----
Upper Elk River	Canada	4400	Mar. 31	37.0	10.2	10.6	7.5	115	4	-----

COLUMBIA RIVER DRAINAGE IN MONTANA

COOTENAI	Date of Survey 1951	Snow Depth (In.)	Apr. 1951	Past Records 1950	Avg. 1949	Avg. Ave.	Years of Record	Ground Surface Condition
Baree Mountain	Mar. 30	109.3	44.2	61.3	55.2	39.7	111	G.N.F.
Blue Bird Basin	Mar. 28	120.2	45.3	46.8	38.2	35.5	128	13
Brush Creek	Apr. 1	36.7	11.6	13.9	19.0	12.0	96	7
Fernie	Mar. 29	34.5	11.5	14.9	7.7	7.8	14.9	15
New Fernie	Mar. 30	47.8	16.7	New Course	22.9	21.1	122	1
Fergusson	Mar. 31	55.2	23.7	17.3	15.2	14.5	119	14
Gerryard	Apr. 3	64.1	17.3	15.2	12.5	12.5	105	17
Gray Creek	Mar. 29	68.3	23.0	24.0	20.5	21.8	105	4
Kimberley	Apr. 1	32.6	9.4	11.2	7.1	5.3	177	24
Marble Canyon	Mar. 30	64.5	22.0	15.7	13.9	15.9	146	5
Nelson Creek	Mar. 30	40.7	18.0	19.9	18.8	13.5	133	24
Red Mountain Mont.	15A1	6000	Apr. 3	62.5	22.0	30.4	21.3	120
Sandon	Canada	3500	Mar. 31	36.6	14.5	12.8	10.7	110
Sinclair Pass	Canada	4500	Mar. 31	31.3	9.5	5.9	4.9	120
Smith Creek	16A1	4800	Mar. 31	127.0	30.5	38.1	49.3	121
Sullivan Mine	Canada	5100	Mar. 31	60.9	18.8	21.2	15.3	116
Upper Elk River	Canada	4400	Mar. 31	37.0	10.2	10.6	7.5	115



MONTANA SNOW SURVEYS, APRIL 1, 1951

COLUMBIA RIVER BASIN

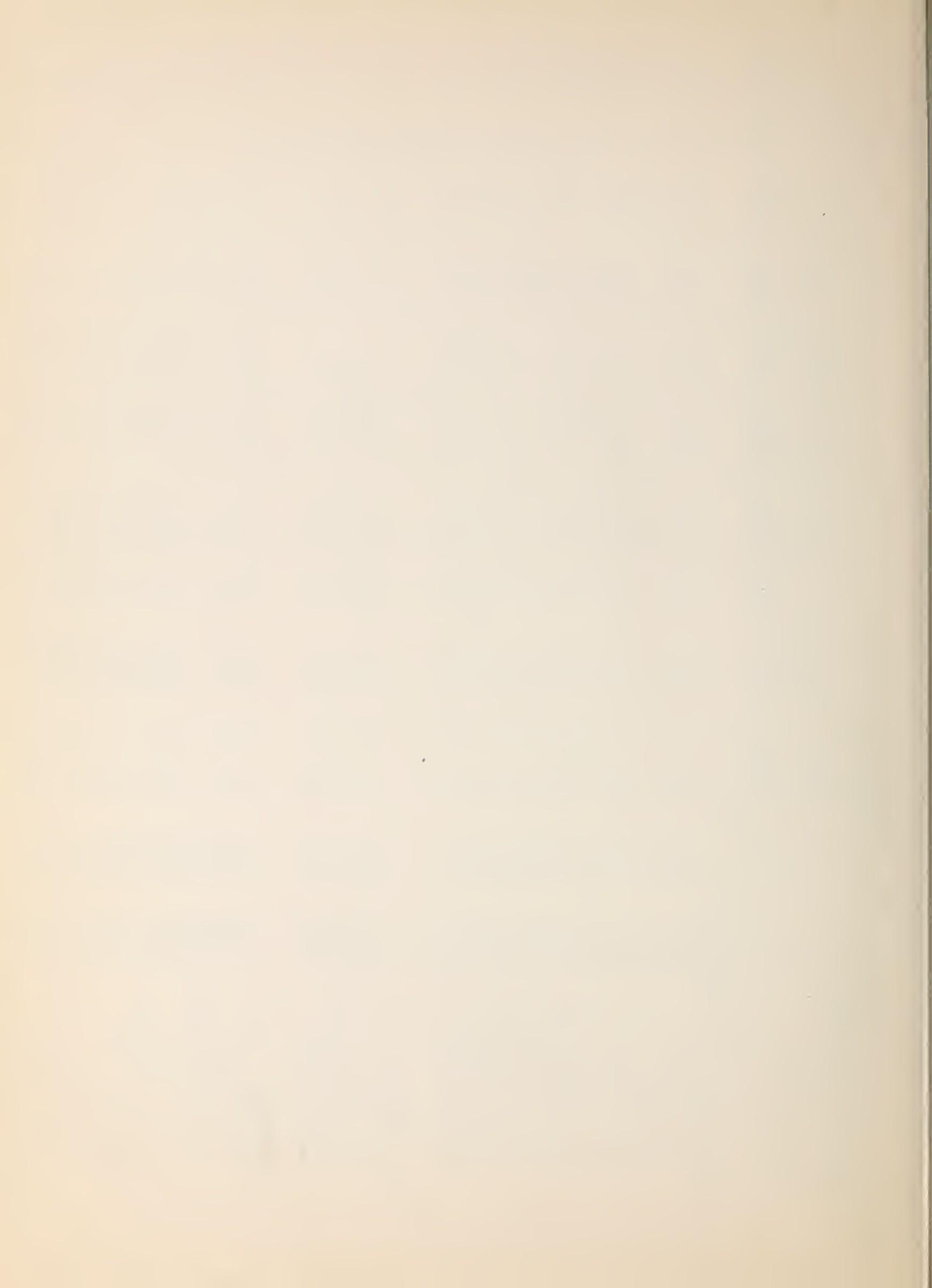
DRAINAGE BASIN AND SNOW COURSE **	No.	Elev.	Date of Survey 1951	Snow Depth (In.)	Water Content (Inches)			Years of Record	Ground Surface Condition
					Apr. 1 1951	Bast Records 1950	Average Data April 1 Avg.		
FATHEAD RIVER									
Big Creek	13B3	6750	Apr. 2	108.3	53.8	40.1	111	11	----
Brush Creek	14A4	5000	Apr. 1	36.7	18.9	12.0	96	7	----
Cattle Queen	13A1	4700	Mar. 31	98.3	45.2	30.3	124	13	----
Desert Mountain	13A2	5600	Mar. 29	61.0	23.3	15.2	140	13	----
Hell Roaring Divide	14A3	5700	Mar. 30	81.5	27.7	29.5	94	10	----
Kishenehn	14A2	4300	Mar. 29	31.4	10.3	7.9	8.1	6	----
Limestone Pass	13B8	7600	Apr. 1	121.8	51.1	46.3	128	4	----
Logan Creek	14A5	4300	Apr. 2	29.2	8.6	10.3	105	4	----
Maries Pass	13A5	5250	Mar. 29	66.8	24.5	12.5	108	13	----
North Fork Jocko	13B7	6330	Mar. 31	114.6	56.3	21.4	146	16	----
Rainy Lake	13B6	4300	Apr. 1	14.8	5.1	18.9	17.5	118	11
Snow Lab. #16	13A9	5200	Mar. 29	69.4	23.2	28.2	39.6	11	----
Spotted Bear Mt.	13B2	7000	Apr. 1	41.6	14.6	19.2	23.5	5	----
Strawberry Lake	13B10	6500	Apr. 2	99.5	41.7	59.1	19.6	4	----
Trinkus Lake	13B1	6500	Mar. 28	110.7	40.8	57.3	47.8	4	----
Trout Lake	13B11	3600	Mar. 30	48.7	19.4	27.0	48.1	4	----
Trout Lake #2	13A12	3600	Mar. 30	47.9	18.5	20.7	47.7	4	----
Upper Holland Lake	13B5	7000	Mar. 29	100.7	37.0	50.8	20.4	95	G.N.F.
Basin Creek	13B14	5000	Apr. 2	26.6	9.1	New	41.6	89	----
Holbrook	13B13	4530	Apr. 2	21.2	7.8	New	10.8	3	----
Quintonkon	13A13	3800	Apr. 1	41.9	15.7	New	22.3	1	----
Twin Creeks	13B11	3580	Apr. 1	25.0	9.5	New	24.5	1	----
UPPER CLARK FORK									
Chessman Reg.	12C5	6200	Mar. 30	15.4	4.4	7.6	4.6	16	----
East Fork R. S.	13D1	5100	Mar. 29	30.6	9.2	10.8	5.1	13	----
El Dorado Mine	13C9	7800	Apr. 3	66.6	25.2	22.3	24.5	3	----
Gemo Pass	8100	8100	Apr. 3	64.3	22.4	20.4	20.4	2	----
Gold Creek Lake	13C8	7200	Apr. 3	53.9	21.2	8.0	12.7	7	----
Intergard	13C4	6450	Mar. 31	29.6	8.5	5.3	40.0	11	----
North Fork Jocko	13B7	6330	Mar. 31	114.6	45.8	39.6	4.2	120	13
Pipesstone Pass	12D1	7200	Apr. 1	28.0	6.8	7.9	7.9	11	----

MONTANA SNOW SURVEYS, APRIL 1, 1951

COLUMBIA RIVER BASIN

Drainage Basin and Snow Course **		No.	Elev.	Date of Survey 1951	Snow Depth (In.) 1951	Water Content 1951	Ground Surface Condition	Years of Record
				Apr. 1 1951	Apr. 1 1951	Past Records 1950	Avg. %Avg.	Average Data April 1 Avg. %Avg.
UPPER CLARK FORK (Continued)								
Rainy Lake	13B6	4200	Apr. 1	14.8	5.1	13.9	11.9	43 5
Skalkaho Summit	13C3	7258	Apr. 1	82.9	34.0	26.3	25.0	138 13
Slide Rock	13C2	7100	Mar. 29	42.4	11.1	11.6	13.5	13 13
Stemple Pass	13C1	6900	Mar. 30	48.0	15.6	16.7	16.0	109 13
Storm Lake #2	12C7	7780	Mar. 31	27.0	8.2	7.2	9.5	117 13
Stuart Mill	13C6	6500	Apr. 1	63.8	33.6	37.9	6.7	122 7
Stuart Mount. #1	13C1	7400	Mar. 31	31.6	5.6	2.6	23.4	114 15
Picnic Grounds	12C6	6500	Mar. 31	25.3	7.4	4.4	7.6	113 7
Southern Cross	13C5	6500	Mar. 31	26.4	8.3	7.6	8.8	137 7
Tennile, Lower	12C2	6250	Apr. 2	42.2	12.0	12.8	10.3	130 16
Tennile, Middle	12C3	6800	Apr. 2	47.5	15.4	14.8	13.2	116 16
Tennile, Upper	12C4	8000	Apr. 3	102.0	38.3	47.5	32.7	117 14
*Lockout	13B2	5250	Mar. 30					118
PEND OREILLE								
Baree Mt.	13B1	6000	Mar. 30	109.3	44.2	61.3	39.7	111 13
Freezeout Summit #2	13C10	6800	Apr. 1	119.5	48.3	New Location		
Hodoo Creek	13C1	6200	Apr. 1	135.5	56.6	59.5	46.4	122 15
*Mosquito Ridge	16A4	5600	Apr. 1	94.0	37.2	44.5	34.5	108 15
BITTERROOT								
East Fork R. S.	13D1	5100	Mar. 29	30.6	9.2	7.6	5.1	178 13
Gibbons Pass	13D2	7100	Mar. 29	75.2	28.3	30.0	22.8	124 13
Mud Creek Pasture	14C1	4500						
Nezperce Pass	14D2	5580	Apr. 2	44.8	15.2	16.0	13.0	
Skalkaho Summit	14D1	6575	Apr. 2	55.8	20.0	24.0	17.2	
Stuart Mt. #1	13C3	7258	Apr. 1	82.9	34.4	36.2	25.0	
Kit Carson	13C1	7400	Apr. 1	83.8	33.6	37.9	23.4	
Savage Pass	14D3	4700	Apr. 3	30.2	9.4	9.0	7.2	
Powell Pasture	14C4	6000	Apr. 1	91.5	34.0	34.6	26.0	
Packers Meadow	15C3	3700	Apr. 1	45.6	15.7	20.4	13.3	
	14C2	5700	Apr. 1	66.9	25.5	25.5	21.5	

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